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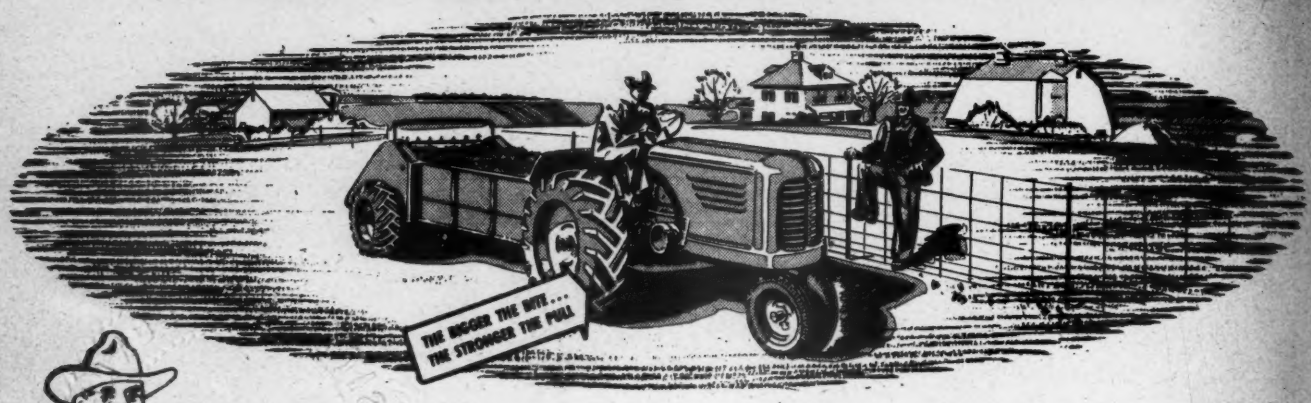

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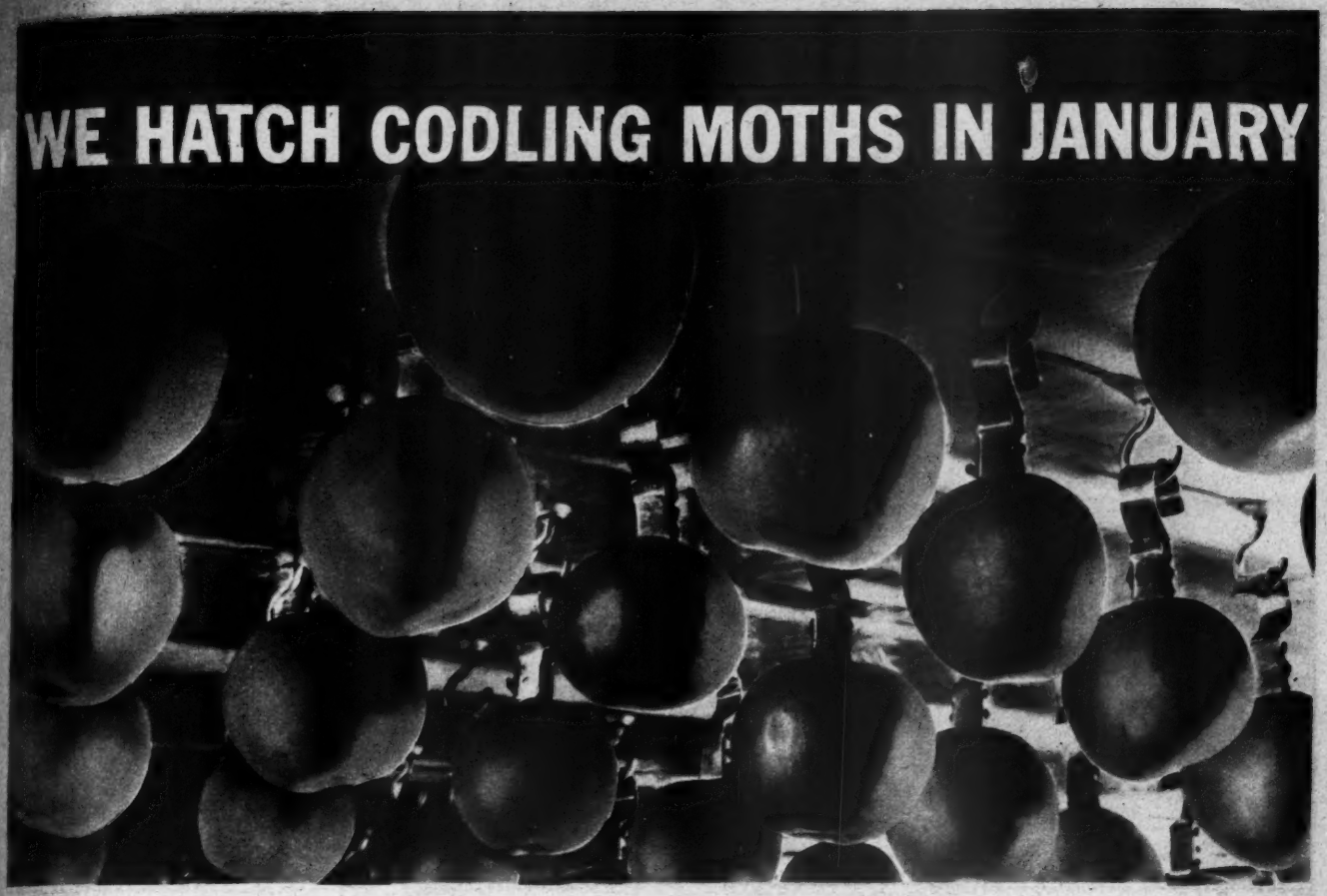

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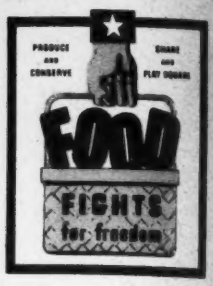

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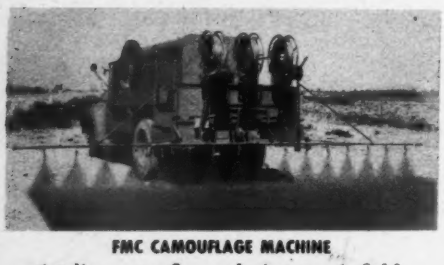

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KEEP 'EM ROLLING FOR VICTORY PRODUCTION

E. G. K. MEISTER, *Publisher*

THE NEW YEAR AND THE FUTURE.

IN these days of post-war planning, the fruit grower and the fruit industry must face the future with a clear vision and an understanding of the facts as they will exist after the war as well as during the war. This is particularly important in the fruit industry, as fruit is a long-term crop, many orchards remaining in production for 40 to 50 years.

The fruit business, like most other businesses, follows certain cycles and trends. Beginning in 1929 the fruit growers, along with other agricultural activities, experienced some trying times. In many cases, however, fruit growers, particularly those with vigorous bearing orchards of the right varieties, fared better than many other types of agriculture.

According to the U. S. Census, there has been a steady decrease in apple tree population for the last 30 years. Since 1930 this decrease has been very marked—116 million apple trees in the orchards of the United States in 1930 and only 71 million apple trees in orchards in 1940.

Much of this decrease is due to neglect during the depression, severe and unfavorable weather and lack of new plantings to replace the old trees that have gone out. Since 1940 demand for fruit has shown a definite upward trend due to many factors. The outstanding protective value of fruit from the standpoint of health has received nation-wide and even world-wide attention. This and other favorable movements have brought a growing demand and steady increase in consumption of fruit and fruit products.

War conditions have considerably changed the distribution of fruit at home and abroad. Apples that were formerly exported in large quantities have been readily absorbed in this country and have helped relieve the shortage created during the war period.

A world-wide shortage of fruit and fruit products was experienced this year and prices have been extremely high. Although better growing conditions will bring larger crops in other years, the increased purchasing power, the great increase in popularity of fruit, due to the universal recognition of its dietary value, can mean only one thing—an increasing consumption of this splendid food.

As pointed out by Fred A. Motz, Marketing Specialist of the United States Department of Agriculture, and one of America's best posted men on world fruit trends and export markets, the tremendous damage that has almost wiped out the fruit production of Continental Europe and other important nations due to the war, neglect and record-breaking winter freezes, has set the stage for a strong demand in these great consuming centers where fruit, always a favorite item, will be extremely scarce for many years.

During the war, fruit and fruit products are being used in large quantities by our armed forces, allied nations and countries freed from the Axis yoke. In the post-war period the demand for fruit throughout the world will offer an added outlet for the products of American orchards.

This condition will probably continue for many years in Europe as well as other parts of the world. Right now, there is a shortage of fruit, a shortage of vigorous young bearing orchards and a shortage of nursery trees to replace the destroyed orchards in various parts of the world. There is a definite opportunity for progressive American orchardists to take steps to meet this situation.

The "Eat More Fruit Campaign" carried on for 15 years by Great Britain and Europe and similar campaigns in our own country, have created a strong demand for fruit that must be met with young orchards that will be coming in to production. This is especially true of apples.

While there are some sections in the United States where there has been an overplanting of Peach Trees, there are other sections where peach orchards are not sufficient to supply the local demand for this fruit. There is a good opportunity in many localities for properly located new peach plantings designed to supply nearby markets.

Every experienced orchard man knows that his best profits and his most efficient production comes from vigorous young bearing trees that have not started to decline. There must be young trees coming on to replace old ones.

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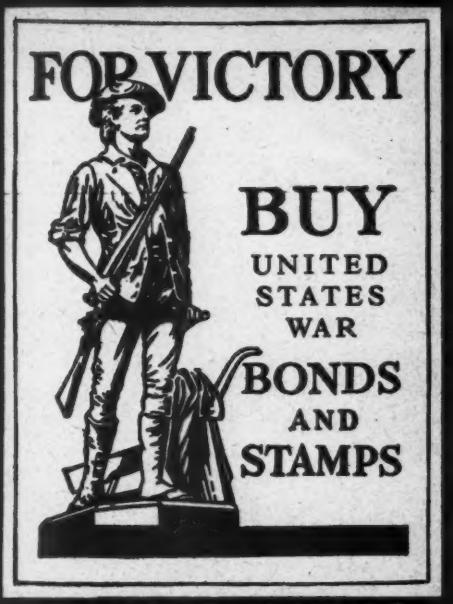


NATIONWIDE NEWS

ACCEPTANCE by farmers of immediate delivery of fertilizer—to avoid an acute labor, storage, and transportation shortage next spring—was urged by the Fertilizer Industry Advisory Committee in a meeting with officials of the WFA in Washington. Also recommended was a voluntary 3-point plan to conserve transportation used by the fertilizer industry, and proposed that 200,000 tons of ammonium nitrate be set aside in 1944 for certain crops in specified areas. The industry advisory group recommended that 100,000 tons of ammonium nitrate, if available, be set aside by regions and States for use in the production of forage and feed crops. These crops are not listed as high priority fertilizer crops under FPO-5. However, the committee said that heavier than usual fertilization would help increase production of these urgently needed feed crops. It also suggested transportation economies.

★

QUANTITIES of canned citrus products that canners will be required to set aside from their 1943-44 pack to meet Government war needs are established in Food Distribution Order 22.5. The order became effective December 1. The percentages are the same as announced by the WFA on October 30. Of an expected production of 20.5 million cases of canned grapefruit juice, Government requirements will total approximately 7.4 million cases. For other canned citrus products (grapefruit segments, orange juice and blended juice), only enough tin is allocated for the production of quantities to meet Government require-

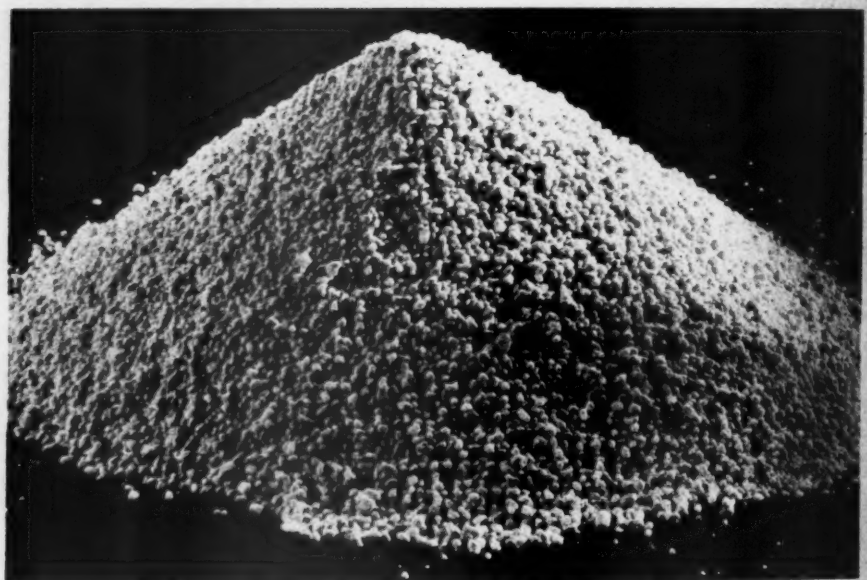
(Continued on page 14)

Granular ammonium nitrate. Left: produced by T.V.A.; Right: produced in Canada.

THE NEWS ON NITROGEN

By FIRMAN E. BEAR

AN AUTHORITY HEREWITH OUTLINES THE ACTUAL SITUATION CONFRONTING FRUIT GROWERS WITH REGARD TO NITROGEN AND OTHER FERTILIZERS



Granular ammonium nitrate

EVERY first-class nation now has one or more factories for picking nitrogen out of thin air and tying it down in solid form for productive or destructive purposes, depending upon which, for the moment, is the more important. Today, with the great need for this element, both on the farm and on the battle front, the air-nitrogen factories are operating at full capacity.

This industry is now nearly 40 years old. It owes its origin to the suggestion of Sir William Crookes who, in 1898, directed the attention of the British Association for the Advancement of Science to its possibilities. His emphasis on the subject stemmed from the fear that the natural deposite of nitrate would soon be exhausted and that, when this had come to pass, the wheat-eating peoples of the earth would no longer be able to obtain adequate supplies of the "staff of life".

But war-minded men quickly saw in these air-nitrogen compounds the means for world conquest. Soon the race was on, each nation attempting to outbuild the other's nitrogen-fixing factories, the first step in the manufacture of explosives. When the first World War began, Germany was already quite independent of Chile. By the time this war has been won, the world's capacity to capture nitrogen from the air will have grown so enormously that we shall have difficulty finding use for these potential explosives in purely peaceful pursuits.

There was a time when soil organic matter was the only known source of nitrogen for crop use, primary dependence being placed on animal manures and cover crops to supply it. When the first nitrate shipments arrived in England, in 1830, no one knew of any use for this crude salt, and it was finally dumped into the sea. Yet, a few years afterwards, natural nitrate began to enjoy world-wide acceptance as a fertilizer, and the growth in its popularity was so

(Continued on page 18)

Interior of a controlled atmosphere storage for apples in the Sodus Cold Storage, Sodus, N.Y.

AIR CONDITIONED APPLES

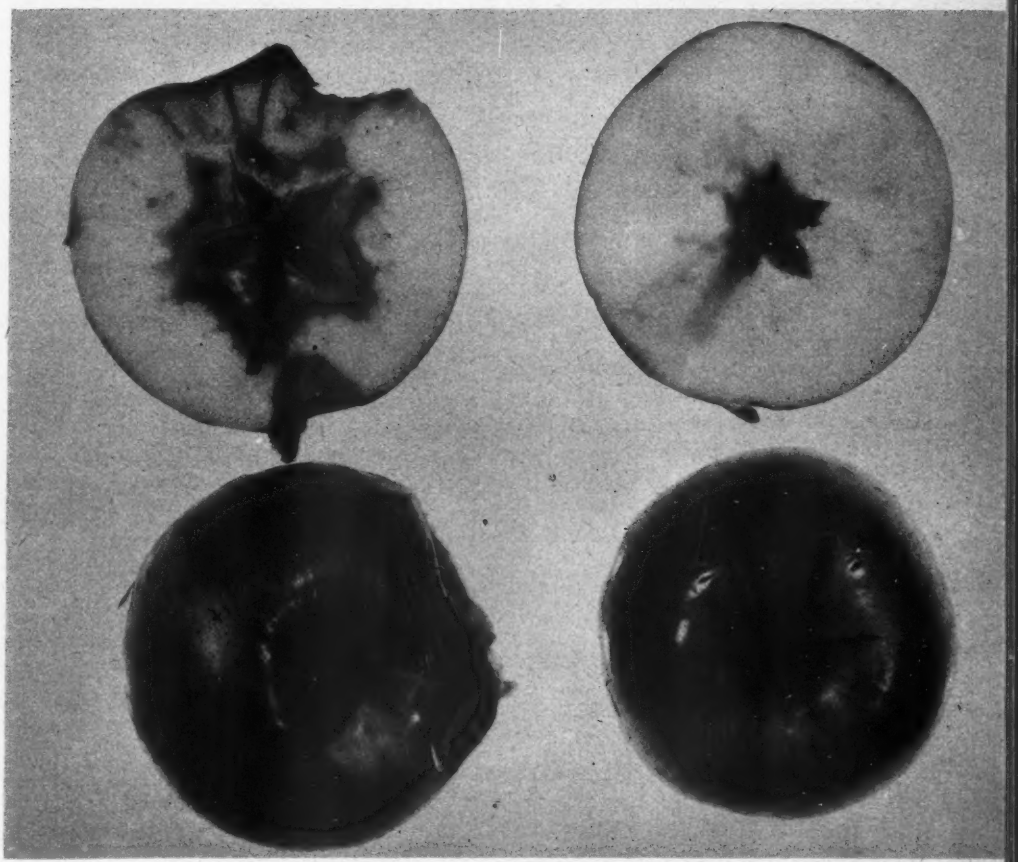
By R. M. SMOCK
Cornell University

TO SPEAK of apples being "air conditioned" seems a little like borrowing a catch phrase from another much publicized industry. Yet air conditioning of fruit is a more complete process of manipulation of the atmosphere than is air conditioning for human comfort. In both types of air conditioning there should be control of temperature and relative humidity. In apple storage several more features must be considered besides these two, however.

Carbon dioxide and oxygen are gases which are never manipulated in air conditioning for humans but they sometimes are for apples. When the oxygen content of the atmosphere is purposely reduced and the carbon dioxide content is allowed to rise in a refrigerated gas tight chamber, the technique is called "controlled atmosphere storage."

The commercial use of controlled atmosphere storage in this country has been confined pretty much to New York although there is at least one commercial installation in California. The advent of the war put a stop to the installation of any large number of such storages in New York.

The commercial development of this procedure in New York has been entirely with the McIntosh variety. In California it has been with Yellow Newtown. Work in Iowa has shown possibilities for Jonathan in that section. It should be noted that it is not universally applicable to all varieties. In fact it may do some varieties more harm than good.



McIntosh removed from storage March 1 and then held 4 weeks at room temperature. Left: from ordinary cold storage at 32°F. Right: from controlled atmosphere storage at 40°F.

Three years of commercial experience by the New York controlled atmosphere storages has given opportunity to fully evaluate this type of storage from a practical standpoint. There has been no doubt but what the storage life of McIntosh has been

(Continued on page 21)

THE WORLD FRUIT SITUATION

FAMOUS INTERNATIONAL COMMODITY SPECIALIST POINTS TO NEED FOR A NATIONAL COUNCIL TO SPEAK FOR AMERICAN FRUITS

By FRED A. MOTZ

Office of Foreign Agricultural Relations
U. S. Department of Agriculture

FRED A. MOTZ

AFTER the war—what then? That question is in the minds of people everywhere. The struggle in which we are at present engaged has affected people in every walk of life; there has been no complete escape. Those within range of cannon shot or death-dealing block busters have been the principal sufferers, but even non-belligerents far removed from the theatres of operation are feeling the effects of an all-out, global, total war. Casualties have been tremendous, not only in terms of human lives, physical disabilities, property, objects of art and culture, but also in the dislocation of production, distribution and allocation of supplies.

It is not my intention to debate the merits of free trade versus protective tariffs or isolation versus intervention. The point I would like to develop, however, is American participation in world affairs and the contribution which you as fruit growers are prepared to make in guaranteeing the peace.

Are we as a nation going to continue to be military friends and economic enemies with our allies, or are we going to work together in times of peace as we have done when threatened with disaster?

When the war is over the United States will be faced with a problem which will call for an important, carefully deliberated decision. Will there be a willingness on the part of the American people to accept the principle that they are a part of the whole international structure? Or, when the shouting and the celebration of the peace have subsided, will they pull back into their shell and begin piling more brick upon a containing wall?

You know, of course, that foodstuffs are an important factor in our international trade, but have you realized that fruit tops the list of our food exports? Fruit ranks first in importance among foods exported from the United States, with an average annual value of $87,000,000 in the 10 years prior to this war. Among all our agricultural exports, fruit is outranked in value only by cotton and tobacco.

Whether you have ever exported or not you have had a definite stake in the export market. Every bushel of apples which has left these shores in past years has made your home market just that much more attractive. For more than a century we have been exporting apples to Europe in ever increasing quantities. In fact the export market has frequently been referred to as the safety valve of our apple industry. Exports in some years ran as high as 16 per cent of our commercial crop as against an average movement of around 10 to 12 per cent. Translated into terms of bushels this has meant the removal of some 12 to 20 million bushels of apples which otherwise would have been placed upon our domestic market. During the twenties and the thirties when supplies were often far in excess of requirements and the market was depressed, did it ever occur to you how much worse the position might have been had this additional 10 to 20 million bushels not been sailing the seven seas?

In short crop years or under conditions such as those existing today the value of an export market loses some of its importance. Momentarily, however, we are having quite a new experience, a situation where requirements are far in excess of supply coupled with unprecedented spending power. None of us are naive enough, however, to believe that this condition will continue; therefore, we are asking ourselves what will our relationship be with respect to the rest of the world when hostilities cease and world commerce is resumed.

For many years growers regarded the overseas market as a dumping ground, not only for their surpluses but for off-grade fruit as well. Following World War I, however, a great change took place in the international fruit picture and many long-established practices became obsolete. Important shifts occurred in the location of the industry itself. Countries which were unknown from a horticultural point of view, suddenly sprang into international prominence. We witnessed a substantial increase in both production and consumption. Many new varieties were introduced which revolutioned consumer habits and broke down long-established trade customs. Great strides were made in production methods and in the physical handling of the crop itself. Higher packing standards were almost universally adopted. Precooling, improved methods of refrigeration, preripening and conditioning are all products of the past two decades.

In addition, the world transportation system has been practically revolutionized. Many new lines were organized with fleets of ships designed especially for carrying fruit. Other lines had their ships re-engined and reconditioned to establish more frequent, faster and regular sailing schedules. This permitted the successful transport of highly perishable products over great distances, thus providing world markets with an abundance and variety of supply, which a few years ago was considered impossible. There is perhaps no period in the history of commercial fruit growing when so many changes have occurred on such a large scale

AND POST-WAR PROBLEMS

This important article on an important problem facing the American fruit growing industry is a digest of an address by Fred A. Motz, International Commodity Specialist, Office of Foreign Agricultural Relations, U. S. D. A., before the American Pomological Society and the Central States Horticultural Conference recently held in St. Louis, Missouri.—Editors.

and over so wide an area as those which took place during the period between the two world wars.

Space does not permit me to elaborate on any of the above points but it would not be difficult to spend an hour or more in discussing the development of the South African deciduous industry or the Palestine citrus industry, or the Argentine or Brazilian industries and the stakes for which they are playing in winning their proportionate share of the world's markets. The record shows that prior to 1930 Belgium was the principal pear exporting country of the world, but was replaced by the United States in the volume of pears moving in international trade. Grape exports from the United States increased from 1,000 packages in 1930 to over 2 million in 1938-39. Exports of oranges and grapefruit from Palestine increased from 2 million boxes in 1928-29 to over 15 million boxes in 1938-39. During the past 10 years Argentina as a fruit producing nation has risen from a place of obscurity to one of international importance. Freight loading of apples from the Rio Negro Valley alone increased from 135,000 boxes in 1932 to three and a half million and that pears from the same area rose from 202,000 boxes in 1932 to around 4 million in 1943. And so on ad infinitum.

While production had shown a phenomenal increase in all parts of the world before the war, the orchards and vineyards in the combat zones indicate a serious decline in production. In the European theatre fruit growing has been one of the greatest of agricultural casualties, largely because of neglect, lack of essential production materials, disruption of transportation and distribution facilities and adverse weather conditions.

In Europe the winters of 1939-40 and 1941-42 are said to have been the most severe on record resulting in a very severe loss of fruit trees. In Germany alone it is reliably estimated that the mortality will exceed 60 million trees or more than one-third of the total pre-war tree population. In Finland it is reported that the industry has been almost entirely wiped out, and we learn that serious damage occurred all the way from the Scandinavian countries south to the Mediterranean and Black Seas. We are also told that the production of oranges in Spain has declined from a pre-war average of 36 million boxes to 15 million, while in Palestine production has dropped from 15 million to 5 million boxes.

Based upon such information as is available it is reasonable to conclude that the world fruit picture has undergone another radical change. The problem in which you and I are now interested is the part which this country is going to play in meeting these changed conditions.

During the twenties and thirties vigorous campaigns were conducted in Europe to make the people more fruit conscious so that they might conserve the ever-increasing supplies imported from all corners of the earth. The campaigns were a success, appetites were created and the markets became clearing houses for the world's offerings.

The one thing we are certain of is that the European appetite for fresh fruit having been frustrated for so long has been sharpened to a keen edge. From England especially we hear about the monotony of the diet and what they would give for just one orange, or grapefruit or apple. We also know that after the war is over Europe will need to import large quantities of agricultural products; what we do not know, however, is the priority rating which will be accorded to fruits. It is not alone a question of consumer needs and of availability of shipping space. The overall problem will revolve around the amount of funds or trade goods for international trading purposes which each country will be able to salvage or produce in the wake of the economic chaos of war.

We do not have to be financial experts to recognize the magnitude of the problem. We can see why it is altogether likely that the different types of restrictive controls, which operated before the war and which have become even stronger during the struggle, will continue in some form or other to operate for some time after hostilities cease. This country is playing an important military part in the European theatre and I sincerely hope that we will maintain an equally important stature when the post-war plans are being developed and formalized. We have accepted the curtailment of fresh fruit shipments abroad in the proper spirit, knowing full well that the utilization of all available shipping space with strategic military material took precedence over desirable but not necessarily essential goods in the military sense.

Our fruit industry, however, while quite willing to sacrifice its overseas outlets as a wartime measure is not conceding the permanent loss of the export market, nor does it expect to give up its proper share in it.

Since the United Kingdom was our most important customer before the war, it is only natural that we should consider her in terms of our best overseas outlet after the war. Under the terms of the Ottawa agreement of 1932 our apples had to pay a duty of four shillings and sixpence per cwt. as against free entry for apples produced within the British Empire. In the trade agreement between the United States and the United Kingdom signed on November 17, 1938, apples were reduced under the terms of the agreement to 3 shillings from the 16th of August to the 15th of April, inclusive. The agreement became effective January 1, 1939, for an initial period of 3 years, and was to continue in force indefinitely thereafter, subject to termination by either government on 6 months' notice.

During the course of negotiations a number of notes were exchanged between the respective governments, one of which had to do with the movement of fruit and which read as follows:

"The Secretary of State (Hull) to the British Ambassador (Lindsay)

Department of State,
Washington, November 17, 1938.

EXCELLENCY:

"During the course of the negotiation of the Trade Agreement signed this day, it has been explained that the fruit growers of certain parts of the British Commonwealth of Nations, together with the United Kingdom producers, have for some time past cooperated in an organization called the Empire Fruits Council, which has made arrangements concerning the shipment of apples to the United Kingdom market from overseas, with the object of maintaining a stable and remunerative market in the interests of all concerned and of avoiding, so far as possible, temporary periods either of oversupply or of shortage. It is understood that British

(Continued on page 16)

It is just good business to charge off depreciation on orchard trees in computing income tax returns

ORCHARD DEPRECIATION

A LONG NEGLECTED EXPENSE ITEM

By MARTIN A. ABRAHAMSEN
University of West Virginia

SUCH factors as business booms and depressions, war and peace, and the extent of world trade prevailing for their products influence orchard operators more than most farmers. During a period of years involving cycles in these phenomena, some orchards are being planted, some are just coming into production, others are in full production, and still others are passing out of production. This suggests that, if the industry is to continue on a permanent long-time basis, growers must make arrangements to replace orchards as they become too old for profitable production. In other words, during the productive life of an orchard, operators must make returns sufficient to cover orchard replacement costs in addition to meeting commonly recognized items of production expense. The fact that replacement costs must be considered suggests that orchards depreciate in value.

Orchard depreciation is an expense item that has not received adequate consideration among professional workers in the field of orchard management and too often has been ignored by growers. It is a significant item, however, and it has to be recognized if any accurate determination is to be made of the profitability of long-time orchard operation. Furthermore, since the Internal Revenue Bureau has recognized depreciation charges on apple trees, as an item which may be deducted in computing income tax returns, it is just good business for growers to be prepared to take advantage of this situation. In this respect the Internal Revenue Code defines depreciation as "a reasonable allowance for exhaustion, wear and tear of property used in trade or business, including a reasonable allowance for obsolescence." The Internal Revenue Bureau continues by stating that, at best, depreciation can only be an "estimate," but that this estimate must be "reasonable." This suggests that if growers are to claim tree depreciation as an operating expense, they would do well to support such claim with figures from their business records.

Since most of the bearing orchards (those upon which depreciation should be charged) have been in production for 15 to 35 years, it is only in exceptional instances that the actual costs of tree development are known. These costs include land preparation and tree expense; labor and materials for such jobs as pruning, fertilizing, cultivating, spraying, and rodent control; various other items relating to orchard development; and such overhead items as interest on total investment (land, equipment, and buildings), building and machinery repairs, taxes, insurance, and administration.

It is not always recognized that, depending upon the age of an orchard—bearing or non-bearing—various expense items should be handled in different ways. For instance until an orchard reaches bearing age the costs mentioned in the preceding paragraph represent an addition to capital investment. They are the costs of developing an orchard. In contrast, after the orchard comes into production these costs should be charged to operations because they become a part of the cost involved in the production of a bushel of apples. Of course, strictly speaking, orchards do not change from a non-bearing to a bearing classification in one year. In other words, between the ages of 8 to 15 years the amount of fertilizer applied is used in varying degrees for tree development (capital investment) and production (operating costs) because the trees have started production at the same time that they are still making vigorous growth. The amount going into each classification depends upon such factors as variety of trees, cultural practices, seasonal differences, and age of trees.

This distinction between costs as they relate to (a) tree development, and (b) fruit production is very important. These two kinds of costs should be kept separate not only to help in determining income tax deductions but for other purposes as well. A general observation with respect to the use of cost data may be in order. After observing records kept by apple growers the writer believes that these costs could be separated without requiring marked changes in accounting procedure. What is more, such shortcomings as appeared common in accounting practices related to failure to use available information in the determination of sound policies with respect to production and marketing rather than to failure to obtain the necessary information. It is only when the information available through business records is used to this end that growers are justified in devoting appreciable time and effort to obtaining them.

Preliminary findings in a study of orchard costs and returns for apple growers in the Eastern Panhandle serve to indicate the importance of tree depreciation as an expense item. Assuming that the costs of orchard development are $150.00 per acre (admittedly a very conservative figure) the relationship of depreciation to other selected expense items is shown in Table 1. For purposes of comparison, high and low items are shown for the individual orchards reporting and weighted averages are calculated for tree development costs of $200.00 and $250.00 per acre.

Reference to this table indicates that if development costs are assumed to be $150.00 per acre, depreciation charges per acre are $6.39 per year, 4.2 per cent of total orchard expense and 3.7 cents per bushel. When development costs are assumed to be $200.00 and $250.00 per acre, depreciation charges per bushel were correspondingly higher; being 4.8 and 6.1 cents, respectively. A further indication of the importance of charging depreciation on orchard trees is indicated by the fact that those growers not following this practice are missing out on the opportunity of charging off $600.00 to $1,000.00 yearly, as additional operating expense, for each 100 acres of orchard operated.

Enough has been said to indicate that depreciation on apple trees is an important expense item and that growers would benefit from taking steps to determine what these charges amount to in their particular instance and then charging these costs in the computation of their income taxes.

For growers interested in giving further consideration to the problem of tree depreciation, it should be mentioned that three rather common methods of charging depreciation have been developed. Brief attention is now given these methods as they apply to orcharding.

Straight-line Method: The most common method of depreciation is the "straight-line" method. Its use may be illustrated by assuming that orchard development costs, in this case, are $200.00 per acre and that an orchard will be in production 25 years. On this basis the yearly depreciation charge per acre is 4 per cent of $200.00, or eight dollars.

The straight-line method has the advantage of simplicity. When it is remembered, however, that orchard production is three times as high during the 21-25 year period as it is during the 11-15 year period, it is evident that this method places too high a per unit depreciation charge on trees during the first years of production and too low a charge during periods of peak produc-

(Continued on page 14)

THE FRUIT OF *PAINSTAKING* CARE

SPRAY WITH BLACK LEAF 40

Every quality apple is worth more when prices run as they have during the war period. Black Leaf 40 is effective against green and rosy aphis, bud moth, red bug, leafhopper, pear psylla and codling moth and helps bring a good crop of high quality fruit.

BLACK LEAF 40 can be applied along with all standard sprays.

PROTECTION AGAINST APHIDS

One aphid sting is all that is needed to cause an imperfect apple. Protect your fruit by proper aphis spray.

BLACK LEAF 155

A non-caustic protection for foliage and fruit quality. Controls codling moth, aphis, leafhoppers, bud moth, leaf miners, pear psylla and grape berry moth.

Write us for further information.

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LOUISVILLE 2, KENTUCKY

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A P S

10 STATES BACK OVERALL PROGRAM

SEVERAL significant things marked the 59th Convention of the American Pomological Society held at St. Louis, December 13-15 in joint session with the Central States Horticultural Conference. Ten state horticultural societies cooperated and during the business sessions a number of these state societies pledged themselves to support the overall program of the American Pomological Society and backed that pledge by definite financial commitments.

The general attendance reached over 400 and represented many more states than were included in the ten cooperating states. No convention that I have attended equalled this one in genuine enthusiasm, and there was a genuine interest in support of the overall program of the American Pomological Society.

The papers were varied and all touched upon the practical phases of the fruit growing industry. One of the most significant addresses was that presented by Mr. Fred Motz, International Commodity Specialist of the U. S. D. A. Mr. Motz stressed that the fruit industry should mobilize now and prepare to meet the post-war situation that will face American horticulture. He pointed out that much of Europe's fruit industry is lost and that there will be a tremendous demand for American grown fruits of all kinds when the war ends. Mr. Motz made a plea that the fruit interests of the United States should have an accredited fruit council authorized to advise with our responsible government officials on behalf of the fruit interests of this country in respect to international undertakings. We are the only major fruit producing country which is not equipped with some kind of industry body representing all horticultural interests which is capable of dealing with international problems in collaboration with government.

It became the consensus of the meeting that in this the American Pomological Society was in a position to render a great service to the horticultural industry and assist in organizing a body with authority to represent the horticultural interests so that American horticulture may be properly represented when post-war export problems have to be met.

In order to achieve the desired results it was pointed out that the American Pomological Society could serve in a very significant capacity, but to do so, would require financial backing so that the necessary meetings could be financed. Hence the prompt support of the various state horticultural societies.

It was further voted that the annual American Pomological Society membership fee should be $5.00. This will materially assist in supplying the funds necessary to maintain and enlarge the service which the American Pomological Society is now called upon to render.

T. J. Talbert was re-elected as President and H. L. Lantz as Secretary.

Professor O. M. Morris

On November 13, 1943, Prof. O. M. Morris, a life member of long standing of the APS, passed away at Pullman, Washington. Prof. Morris was long identified with the fruit industry of the Pacific Northwest. He became head of the department of horticulture at Washington State College in 1910 and served in that capacity for a number of years. He served the institution until his death as a member of the horticultural staff. He was also a life member of the Washington State Horticultural Association and served as its president in 1934. Prof. Morris contributed many articles and bulletins dealing with the fruit industry of his state. In the passing of Prof. Morris, horticulture loses a faithful worker and a good friend. He was born in Kansas in 1874, received his B.S. degree at the Oklahoma A. & M. in 1896, and stayed there as instructor in horticulture until 1909. He then went to Washington State College as professor of botany and horticulture in 1909.

WHAT ABOUT 1944?

There is now developing a consciousness in the United States that the production of apples is on the down swing. A cycle of underproduction is here. The 1943 crop was not normal, but it illustrated what can happen to prices when the crop is short. What constitutes an adequate supply of apples will always be guesswork, because that depends upon so many variables. The size of the apple crop varies tremendously from year to year. The year 1944 should, barring the accidents of weather, be a "good" apple year, "good" from the standpoint of more apples than were produced in 1943. Can the country use a bumper commercial crop of, say, 140 million bushels in 1944? It probably could with pay rolls up and demand "up." The supply of money in the hands of the consumer places apples in the homes of many people who have previously used only a few apples and in small amounts.

CALENDAR OF COMING MEETINGS and EXHIBITS

Jan. 5-6—Annual meeting of Maryland State Horticultural Society, Hagerstown. Subject to change.—A. F. Vierheller, Sec'y, College Park.

Jan. 5-6—Massachusetts Fruit Growers' Association annual meeting, Horticultural Hall, Worcester.—Lawrence Southwick, Research Assistant, Amherst.

Jan. 12-14—Annual meeting of New York State Horticultural Society, Rochester. —Roy P. McPherson, Sec'y, LeRoy.

Jan. 14-15—Annual Meeting of Utah State Horticultural Society, Salt Lake City.—Dr. A. Stark, Sec'y, Logan.

Jan. 17-18—Southern Illinois Horticultural Society meeting, Carbondale.—Curt E. Eckert, Sec'y, Belleville.

Jan. 18-20—Annual meeting of Pennsylvania State Horticultural Association, Harrisburg.—J. U. Ruef, Sec'y. State College.

Jan. 26-27—Annual meeting of Ohio State Horticultural Society, Carter Hotel, Cleveland.—Frank H. Beach, Sec'y, Columbus.

Jan. 26-28—Eastern meeting of New York State Horticultural Society, Kingston.—Roy P. McPherson, Sec'y, LeRoy.

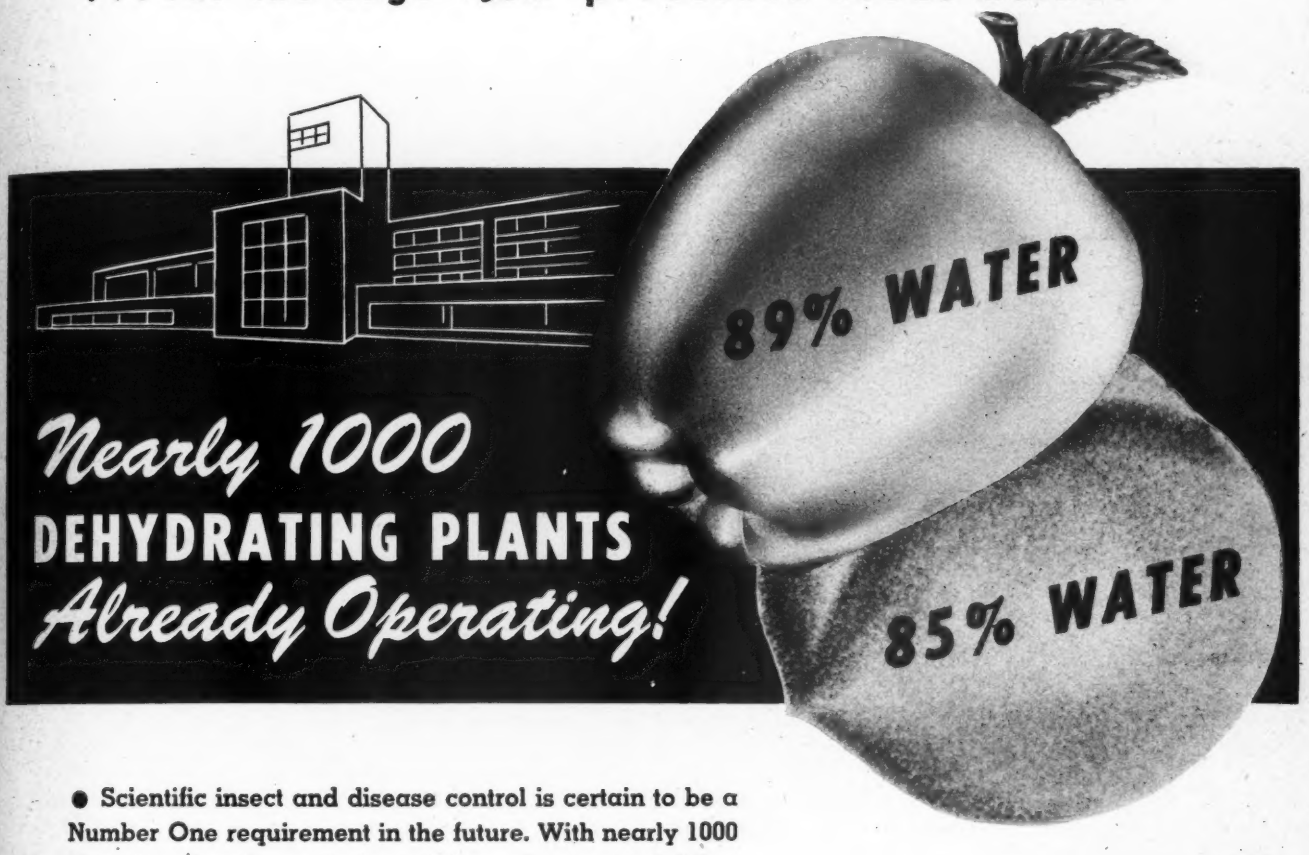
Feb. 10-11—Annual meeting of Kansas State Horticultural Society will be held in conjunction with Farm and Home Week, Kansas State College, Manhattan. —Geo. W. Kinkead, Sec'y, Topeka.

Feb. 11-12—Annual meeting of West Virginia Horticultural Society, Martinsburg. —Carroll R. Miller, Sec'y, Martinsburg.

Feb. 11-12—Maine State Pomological Society Annual meeting, Hotel DeWitt, Lewiston.—J. H. Waring, Sec'y, Orono.

Wanted: PERFECT FRUIT

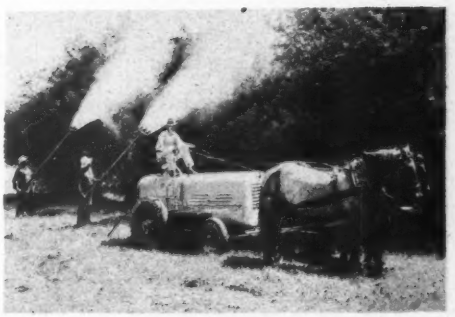
. . . for the huge *New* processed-foods market

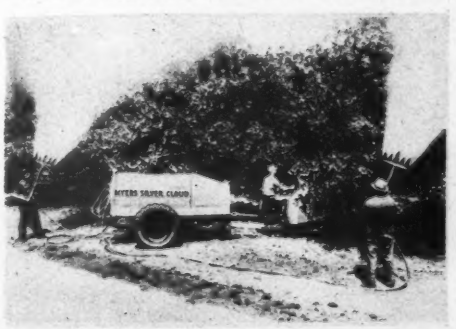


Nearly 1000
DEHYDRATING PLANTS
Already Operating!

● Scientific insect and disease control is certain to be a Number One requirement in the future. With nearly 1000 factories already producing millions of pounds of dehydrated foods annually—with new fast-freeze and juicing processes opening vast new postwar markets — big opportunities await fruit growers who can meet the high standards now being set.

Perfect, unblemished fruit requires effective, on-time spraying — the kind of performance assured by Myers quality equipment. Talk with your Myers dealer about your postwar sprayer needs — and see him if you need repair or replacement parts for your present sprayers.





THE F. E. MYERS & BRO. COMPANY
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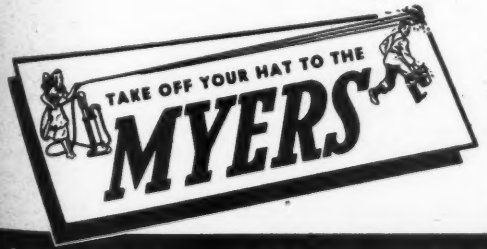
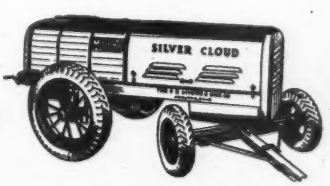




SPRAYERS • PUMPS • WATER SYSTEMS • HAY UNLOADING TOOLS

Table 1. Relationship of Apple Tree Depreciation to Other Selected Expense Items for Bearing Apple Orchards in the Eastern Panhandle of West Virginia, 1938-1941

Relationships	Yearly tree depreciation: Charges per acre	As a percentage of total depreciation	[1] As percentage of total orchard expense	[2] In terms of cents per total bushel of apples produced
	Dollars	Per cent	Per cent	Cents
High cost grower	7.45	50.6	3.6	3.0
Low cost grower	5.41	78.4	6.6	4.2
Av. at $150.00 per acre	6.39	60.8	4.2	3.7
Av. at $200.00 per acre	8.51	67.4	5.5	4.8
Av. at $250.00 per acre	10.65	72.1	6.8	6.1

[1] Total depreciation includes depreciation on building and equipment in addition to apple trees.

[2] For the orchards reporting, average yearly yields for the period were 174 bushels per acre.

ORCHARD DEPRECIATION

(Continued from page 10)

tion. Furthermore, charges are too high during the last years of normal production. For these reasons some growers may want to give consideration to other methods of charging depreciation.

It should be mentioned, however, that in a few instances growers have followed this method of charging depreciation on bearing apple trees. Where growers have presented supporting statistical information the Bureau of Internal Revenue has accepted $7.50 per tree as the cost of development (12 years of age) and has then permitted this cost to be depreciated uniformly over a period of 25 years.

Compound Interest Method: A second method of charging depreciation is the "compound interest" method. It assumes that the depreciation charge represents an actual amount of money that is placed in a sinking fund for orchard replacement and that as such it will draw the going rate of interest until it is reinvested in the orchard business. This is a reasonable approach if entirely new plantings are contemplated and if allowance is made for the fact that new plantings should be started at least 10 years before the established orchard goes out of production.

Most growers, however, tend to maintain their established orchard with yearly, or at least periodic, capital investments in trees and the necessary labor, material, and equipment expenditures to maintain such replacements. Under such conditions the compound interest method is too far removed from reality to be particularly workable. Another problem centering about the adoption of this method is the determination of the correct interest rate to charge as a credit to the earnings of the sinking fund—a difficult problem under any circumstance.

Production Unit: The method suggested in this report as most nearly giving a true picture of orchard depreciation may be termed the "Production Unit" method. (In a letter to the writer the Bureau of Internal Revenue stated that depreciation "based on estimated production will no doubt be acceptable to the Bureau." They favor the straight-line method, however, perhaps for reasons of convenience and simplicity.) It is based on the assumption that depreciation in the orchard business is a charge that must be paid for by the units of fruit produced. In this respect it is essentially the same as charging depreciation on cars or trucks on a mileage basis. To use this method it is necessary to have basic information concerning the production of fruit according to the age of trees. Having this information, and then assuming that depreciation is based on the productive life of the trees, it is possible to work out a formula that may be used in determining the amount of depreciation to charge per year.

In summary it may be said that:

(1) While depreciation on orchard equipment and buildings usually has received adequate treatment, depreciation on the orchard proper (bearing trees) has not received sufficient consideration in problems of orchard development, maintenance, expense determination, and income tax computation.

(2) Since tree depreciation is a cost that is recognized by the Bureau of Internal Revenue, it is definitely to the advantage of growers to determine what these costs are and to take steps to include them in income tax computation. Furthermore, if orcharding is to be maintained on a long-time basis, growers will have to meet costs of orchard development out of returns from production and they will have to know what these costs are if they are to obtain an accurate picture of the profitableness of their business operations.

(3) The development of a graduated depreciation charge based on the "production-unit" method gives those growers who are interested in a more detailed and accurate picture of orchard depreciation an idea of how these costs can be charged to an orchard in proportion to production—the best available measure of ability to meet these charges.

NATIONWIDE NEWS

(Continued from page 5)

ments, and the reservation is equivalent to the entire pack.

★

THE War Food Administration has been assured by the War Production Board that sufficient copper for production of copper sulphate to protect next year's food crops from bacterial and fungus diseases will be available.

WFA suggests to consumers and distributors how they can, and must, cooperate with manufacturers if adequate quantities of copper pesticides are to be available when needed next year. It is absolutely necessary that consumers and distributors order and accept delivery as soon as possible, WFA states.

The WFA order-early suggestion is prompted by three manufacturing and distributing factors: (1) Copper is allocated quarterly for fungicides on the basis of demand; (2) Manufacturers do not have adequate space to permit storage until the products are needed; (3) The labor and transportation situation is too critical to permit delaying manufacture and distribution until buyers actually need the copper chemicals.

★

APPLES used by authorized processors in designated areas in Washington and Oregon or apples produced in these areas and used by authorized processors elsewhere will not have to be inspected after December 21, 1943, the War Food Administration states.

The inspection requirements, contained in Food Distribution Order 83.3 which became effective November 16 have been terminated by the Food Distribution Administration.

★

THE War Food Administration announces a new schedule of freight equalization payments designed to encourage the proportionate distribution of apples from the Pacific Northwest into all sections of the United States. The new schedule went into effect on December 13 and replaces a previous schedule of payments which have been in operation since October 17.

The payments, which are being made to help pay the cost of shipping apples from Washington, Oregon and Western Idaho into points within 42 other States, are needed to bring about the proper geographic distribution of the apples and, at the same time, permit Western growers to obtain returns for their fruit comparable to those being received by Eastern growers, the WFA stated.

Under the new schedule, the WFA will make payments ranging from 4 to 51 cents per box on standard wrapped apples and from 8 cents to $1.02 per hundredweight on apples shipped in bulk, loosepacked, or non-standard wrapped.

When you own a "Friend"—

—*you will have surer crop protection* than ever before. The "Friend" pump, that has only 1/2 to 1/3 as many moving parts as other high-pressure spray pumps, will certainly give you more dependable service—as it has given so many other growers.

You will have far less trouble and expense keeping your sprayer running. Here's a spray pump that has no crankshafts or connecting rods—no wrist pins, no plunger cups. There is no wear whatever on the "Friend's" cylinder walls, because no contact.

You will have steadier high pressure. You'll never spray with a leaky pump, because the "Friend's" packing is adjusted instantly—from the outside. To clean a valve, you will merely loosen a hex-head screw—and instantly lift the valve out.

And that isn't all. In many other ways, the "Friend" design is more practical. Find out why thousands of growers say: "The 'Friend' has given us MOST SATISFACTION and LEAST TROUBLE." Write for the "Friend" Catalog.

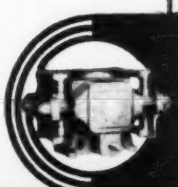
"For dependability the 'Friend' is best, also cheaper to keep running and easier to work." —*George Kahrs, Sutton's Bay, Mich.*

Mr. Kahrs expresses the exact sentiments of thousands of other growers who have used several different makes of sprayers.

You can get a "Friend" in any size from 5 to 70 gal. per minute. All chassis styles.

Dusters with the same reliability as "Friend" Sprayers. For large acreage, the "Friend" Unifeed. Also low-cost utility models.

Sizers and Cleaners for every need—from large commercial equipment to small growers' models. No other sizers give the fruit such gentle handling.



Easiest to Maintain in Working Order--
Fewest Moving Parts
"FRIEND"

Friend Manufacturing Company

Gasport, N. Y.

Mail the coupon for Catalog showing the machine you need (and get a "Friend" Spray Chart, giving data on spraying pressures, tree coverage, friction loss, nozzle sizes required, etc., etc.)

FRIEND MANUFACTURING COMPANY, Gasport, N. Y.

☐ Send the new 1944 Spray Chart, and put me on your list for "The Apple" and other Friend helps for the grower.

Send me catalog on Friend

☐ SPRAYERS ☐ DUSTERS ☐ SIZERS ☐ CLEANERS

Name .....

Address .....

THE WORLD FRUIT SITUATION

(Continued from page 9)

Empire producers of citrus fruits are also represented on this Council.

"It has been represented to me that the cooperation of the exporting interests in the United States, which is the only major apple-exporting country, would be of great assistance in securing the orderly marketing of the apple crop and would be of no less benefit to them than to the other suppliers. I have the honor to inform you that the Government of the United States of America inclines to the view that it is in the general interest that the shipment of apples to the United Kingdom should be so planned as to avoid excessive variations in supplies and prices, and that it will call the attention of United States exporting interests to the desirability of their cooperating with the Empire Fruits Council in such arrangements as may be feasible to assure the orderly supply of apples to the United Kingdom market.

"In the foregoing connection, your attention is invited to legislation in effect (Public No. 39, 73d Congress, approved June 10, 1933) which provides for the regulation of exports of apples (and pears) from the United States on the basis of grade or quality. Under this Act, the Department of Agriculture has issued regulations which require that all apples (and pears) shipped to foreign countries meet certain export standards. The effect of these regulations is to make large shipments of low-quality fruit to British or other foreign markets impossible.

"I understand that up to the present no similar arrangements have been made for planning the shipment of citrus fruits to the United Kingdom market, but that certain British Empire producers have expressed a desire for some form of arrangement for the orderly marketing of citrus fruits in the United Kingdom, with a view to avoiding disturbances resulting from sudden fluctuations in supplies. I have the honor to inform you that, if the principal supplying countries (including foreign countries) should agree to cooperate in arrangements for the orderly supply of citrus fruits to the United Kingdom market, the Government of the United States of America would call the attention of United States exporters to the desirability of cooperating in any feasible arrangements to this end.

"I avail myself of this opportunity to renew to Your Excellency the assurance of my highest consideration.

CORDELL HULL

His Excellency
The Honorable Sir Ronald Lindsay,
P. C., G. C. M. G., K. C. B., C. V. O.,
British Ambassador."

England declared war on Germany in September 1939 and imports of fresh fruit were among the very first of the commodities to be curtailed. The new agreement, therefore, never had an opportunity to function. Consequently we are in no position to judge its merits. But we know that the environment in which its influence will again be brought to bear will be materially different from that in which it was originally drawn.

This then brings us up to the principal point—that of the basis on which United States of America shall participate in world fruit affairs. The question of United States participation in the Empire Fruits Council in London was raised before the war and we are told that serious consideration is now being given to the question of including certain other non-Empire countries in addition to the United States. Should the United States be asked to become a part of such an international council and should they accept, the problem immediately arises as to who should speak for the United States and on whose behalf. It is my personal opinion that in order to meet on equal terms with representatives of other countries, we should have in this country an accredited council which would be authorized to advise with our responsible government officials on behalf of the fruit interests of the country in respect to such international undertakings. In each of the countries now operating within the framework of the Empire Fruits Council there is a national organization, representative of the fruit industry as a whole and in whose behalf the spokesman at the Empire Council expresses himself. We are the only major fruit producing country normally dependent upon exports, which is not equipped with some kind of industry body representing all horticultural interests which is capable of dealing with international problems, in collaboration with the government.

I do not believe it will be a matter of choice whether quantitative as well as qualitative controls over imports and exports are to be exercised in the post-war world. But it is a matter of choice how the United States Government and the United States producing and distributive interests prepare themselves to meet the situation.

We have an excellent basis for such an advisory body in the already established and active horticultural societies, trade and marketing organizations, and commodity associations. As individuals we cannot address ourselves to foreign governments. Neither can government representatives act for you successfully without the benefit of your working knowledge, your concept of hopes and desires, and your support. The United States spokesman who participates in any international fruit council must be your representative, the representative of a common, agreed-upon point of view. He must represent, and not improvise; but he can do so only if the industry decides and defines what it wants, and what responsibilities it is willing and able to undertake.

The difference between success and disappointment in the conduct of our affairs abroad will lie to a large extent in the way in which we attend to, or neglect, the expression of our common hopes and beliefs here at home. The international conference table is no place to settle differences of opinion between ourselves. Lively differences and spirited competition are a part of the vitality and progressiveness of our industry.

We now have the task of searching out the choices which will be open to us in our post-war international opportunities and obligations. We shall have to find the way to give definition and practical expression to our conclusions. A thicket of seedling ideas sprouting up and growing wild will not be very productive. We shall have to devise a process for sorting them out, arranging them in orderly fashion, cultivating, fertilizing, and—yes—pruning them until we have something worth showing the neighbors.

We shall need a clear and recognized channel through which every producer may have a way to make his voice heard; to have his views and proposals weighed, considered, and merged with other producer views, first by his own section or commodity group and then by the industry as a whole, to emerge eventually as a responsible statement or recommendation on behalf of the whole industry. The problem I am calling to your attention is how to establish that channel of democratic, responsible procedure.

I am not presuming to suggest when the war will end but I am suggesting that we begin taking immediate steps toward the setting up of a national fruit body constituted along the lines indicated. When the Empire Fruits Council or any other international fruit body sits down to prepare plans for the immediate reconstruction period or the long-term period of development the United States must be prepared to play its part. It is therefore highly essential that the spokesman for the United States, whoever he may be, will be in position to reflect the point of views of his government, which is after all, the views of the people. Industry and government must work closely together and with complete understanding and harmony if international agreements are to succeed. It is my hope, therefore, the fruit people of

(Continued on page 29)

BE FOREHANDED ORDER EARLY IN '44

HERE IS THE GOVERNMENT'S SUMMARY ON THE INSECTICIDE SITUATION

Government officials and insecticide authorities assure fruit growers that in 1944 there will be an adequate supply of insecticides and fungicides, if buyers will "Be Forehanded" and order early. If this is done there will be enough for all, even if there is none to spare. It is urged, however, that growers plan their spray programs now—and order early—to avoid possible delays and disappointments due to wartime transportation difficulties. It is also advisable to order everything you can in dry form. This will help to ease the tremendous load the railroads and motor transport services must carry in behalf of national defense.

●

BEING FOREHANDED AND PLACING YOUR ORDER NOW WILL ENABLE US TO PROTECT YOU AGAINST SPRING DELAYS IN DELIVERY

Sherwin-Williams is now producing a complete line of insecticides, fungicides, safening agents, spreaders and stickers for the fruit growing field, in quantities sufficient to take care of our customers if they will place their orders now through their regular dealers, and take delivery as we can ship.

●

By being forehanded and placing your order now, you will enable us to protect you against spring delays due to possible shipping difficulties.

THE SHERWIN-WILLIAMS CO.
101 Prospect Ave. Cleveland, O.
Insecticide Dept.

We Can FILL ORDERS *NOW... for*

ARSENATE OF LEAD

S-W Arsenate of Lead is 98% pu Arsenate of Lead. It contains not more than 50% arsenious oxide and the lo amount of water soluble arsenic, wh results in maximum control of codli moth and many other insects that att fruit and foliage.

SAFE-N-LEAD

S-W Safe-N-Lead completely neutr izes the water soluble arsenic found Arsenates of Lead. When added to Ar nate of Lead in the spray tank, S Safe-N-Lead "converts the water solu arsenic into a stable compound" wh will not burn apple foliage, but st imates the growth of healthy, gre leaves.

DRY LIME SULFUR

Because 1943 was a bad season russetting, it is important in 1944 to S-W Dry Lime Sulfur to assure fi color and smoother finish of apples use is also advocated because of wartime shortage of metal drums tank cars for shipment of Liquid Li Sulfur. By using Dry Lime Sulfur, delivery of which can be assured, will also be protecting your trees f foliage burn and from the stunting foliage, commonly caused by the use caustic Liquid Lime Sulfur.

DINITROL

S-W Dinitrol is an important additi to your spray program because it ki the eggs of Rosy Aphis and Early Gre Apple Aphis in the dormant perio Thus it is cheaper to use Dinitrol as aphis than to spray during the grow season with Nicotine Sulfate. S Dinitrol is a dry powder containi dinitro-ortho-cresol and is recommend for use with all properly made oil emu sions.

SPRALASTIC

The uniform and heavy deposit resu ing from the use of S-W Spralastic w make the Arsenate of Lead you are usi much more effective in the control codling moth. Its use as a spreader a sticker actually causes three to four tim more Arsenate of Lead to remain on t fruit by increasing the adhesive a spreading properties of the Arsenate Lead particles and eliminating waste run-off, yet the deposit is easily remov in the washing process.

MULSOID SULFUR

S-W Mulsoid Sulfur is a dependab wettable sulfur spray, containing not less than 95% of sulfur. It is an excelle spray for the control of scab on appl pears and the control of Brown Rot a Scab of peaches. It gives a smo finish to apples and does not russet fruit or burn the foliage.

SUMMER MULSION

Years of successful use in the leadi apple growing sections of this coun have demonstrated the superiority of S Summer Mulsion as a spray to kill the eggs of codling moth. Among outstanding qualities are: quick brea ing and high oil deposit.

THE NEWS ON NITROGEN

(Continued from page 6)

rapid that it seemed certain the supply would soon be used up.

Beginning in 1858, however, sulfate of ammonia, a substitute for nitrate, became available as a by-product of the coking industry. In 1886, the discovery was made that the nodule bacteria on the roots of the clovers could accumulate nitrogen from the soil air. Finally, in 1905, the first commercial nitrogen-fixing factory came into existence. Now the nitrogen problem resolves itself largely into one of competition between the farm and the munition factory for the very large amounts of nitrogen materials that are available for use. As long as the war lasts, the supplies of these materials are likely to be somewhat less than could be used to advantage for both purposes. We might reduce our soil needs for nitrogen by growing larger acreages of clover and the other legumes for plowing-under purposes, but this would call for considerably heavier applications of phosphate and potash fertilizers than may be available for use, and for devoting food-producing land to a job which could better be done in a factory.

The present impressive list of air-nitrogen compounds, all of which can be used either as fertilizers or as explosives, includes nitrate of soda, nitrate of lime, calcium cyanamid, ammonium sulfate, ammonium phosphate, ammonium nitrate, and urea. Under pre-war conditions, the fruit grower could choose the one he preferred. Today, that choice is limited to whatever is left over after the needs of the munitions factories have been set aside, and after the fertilizer industry has been given its allotment for the production of mixed goods.

Over the years, farmers and fruit growers have become accustomed to using sodium nitrate, ammonium sulfate, and cyanamid, their choice depending partly upon the relative cost of nitrogen in these three forms and partly on their past experience with them. Today, in certain areas, we are asked to use ammonium nitrate instead. One important reason for this lies in the fact that a 100-pound bag of this product, containing 32.5 per cent nitrogen, will supply as much of this element as about 200 pounds of sodium nitrate, 160 pounds of ammonium sulfate, or 150 pounds of cyanamid. Its use will effect a great saving in shipping space, hauling, and labor, all very important matters in time of war.

Ammonium nitrate is not a new fertilizer, having long been sold under the trade name of "Cal-Nitro," a less concentrated product that was made to contain either 16 or 20 per cent nitrogen, depending upon whether it was to be offered in competition with sodium nitrate or ammonium sulfate. An important reason for diluting the ammonium nitrate was that this helped to overcome its tendency to absorb moisture from the air and to dissolve in this accumulated water. Thus pure, white ammonium nitrate, when exposed to the air on a humid day, changed to a colorless liquid. If the product was dry when it left the factory, and if it was shipped in moisture-proof bags, it might arrive in good condition but, when the bags were opened, it soon became undrillable. Accordingly, the producers began experimenting with drying agents. This resulted in the production of a material that contained from 40 to 60 per cent calcium carbonate or pulverized limestone.

As soon as it became apparent that large quantities of the undiluted ammonium nitrate would be available for fertilizer use during this war, both governmental and industrial chemists set to work to find some better means of keeping it in good condition until it had been applied, and yet not diluting it to the extent to which this had previously been done. It was finally found that, by granulating the material, covering the granules with a wax-like material, and adding small amounts of a fine clay-like dust, a drillable product could be made whose handling qualities were quite similar to those of the modern forms of sodium nitrate. The bags in which this new product is being shipped are, of course, waterproofed. The material, of which that manufactured in the United States is known as "Ammonium Nitrate Fertilizer" and that from Canada as "Nitraprills", is now expected to reach the farm in excellent drilling condition and to stay that way, after the bag has been opened, for a considerably longer period than is necessary to apply it.

Quite naturally, many questions have arisen about ammonium nitrate. Is it as good a source of nitrogen as sodium nitrate, ammonium sulfate, or cyanamid? Since the product carries half its nitrogen in the same form as that in sodium nitrate and half in the same form as that in ammonium sulfate, it would seem that it has an advantage over either of these two materials used alone. A study of the many field comparisons of ammonium nitrate and the several other carriers of nitrogen indicates that this may be the case. Thus Bailey Brown, of the U. S. Department of Agriculture, averaged 27 tests on potatoes in Maine, New York, Pennsylvania, and Virginia, found that the acre-yield was 232 bushels where nitrate of soda was the source of the nitrogen, 235 where ammonium sulfate was the nitrogen carrier, and 241 bushels where ammonium nitrate was used instead. Certainly, the fruit grower can shift to the new product with confidence. If he has been accustomed to using 5 pounds of ammonium sulfate or cyanamid per tree, all he needs to do is to reduce the rate to 3 pounds per tree, and go ahead with ammonium nitrate. If he has been using sodium nitrate, he can cut his rate of application in half.

But we cannot get away from the fact that nitrate of soda does supply soda, that ammonium sulfate supplies sulfur, and that cyanamid supplies lime. If the soil conditions are such that one or the other of these three constituents is needed, the product that supplies it has an advantage. The 32.5 per cent grade of ammonium nitrate supplies nitrogen, but nothing else of value.

If any fruit grower needs more than nitrogen, and many of them do, the answer can be found in using complete fertilizers and, if necessary, supplementing these with lime. Such fertilizers usually contain large amounts of calcium and sulfur, and their potash will normally accomplish whatever effects can be credited to the soda of sodium nitrate. But even these complete fertilizers will contain from one-fourth to one-half of their nitrogen in the form of ammonium nitrate this year.

In general, nothing serious stands in the way of the fruit grower's fertilizer program. The supply of nitrogen fertilizers seems adequate to meet the normal needs for this element. The problem of drilling-quality of ammonium nitrate has been solved. If phosphate and potash have been used in the past, as required, one will get the desired effects from the use of ammonium nitrate. If they have not been used, and there is need for the extra elements which they supply, then this might be a good year to make a change to a complete-fertilizer program. In either case, there should be adequate supplies of fertilizer to meet all the more important needs for 1944.

SPRAY PROTECTION

Start Right Today for the Right

at Picking Time

Spray plans for the 1944 campaign against Codling Moth and Scab are being "put together" right now by forward-thinking fruit growers. Their planning is along practical and well-studied lines. It will take in *only* the spray materials that have been shown to be dependable in control efficiency . . . and the importance of avoiding foliage injury will never be overlooked for a moment. The chances are that these growers will get top quality finish and yields. *Consistently through the years growers of outstanding crops throughout America have found that it pays to rely on Orchard Brand!*

PUT THESE IN YOUR SPRAY PLANS

. . . The sulfur spray material built especially and exclusively for apples!

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APPLE DRITOMIC* SULFUR

With the *Patented Sodium Thiosulfate* feature that puts an "extra wallop" in scab sprays.

. . . Foremost among the nation's commercial growers due to "stand-out" orchard performance.

ORCHARD BRAND

LEAD ARSENATE

Standard, also "Astringent" which has been gaining wide preference due to advantages of exclusive astringent feature.

. . . Nicotine Sulfate will probably be called for in more 1944 apple spray schedules than ever before. Fruit growers know from experience that there is none better than . . .

ORCHARD BRAND

NICOTINE SULFATE

. . . Uniformly high in purity and spray efficiency.

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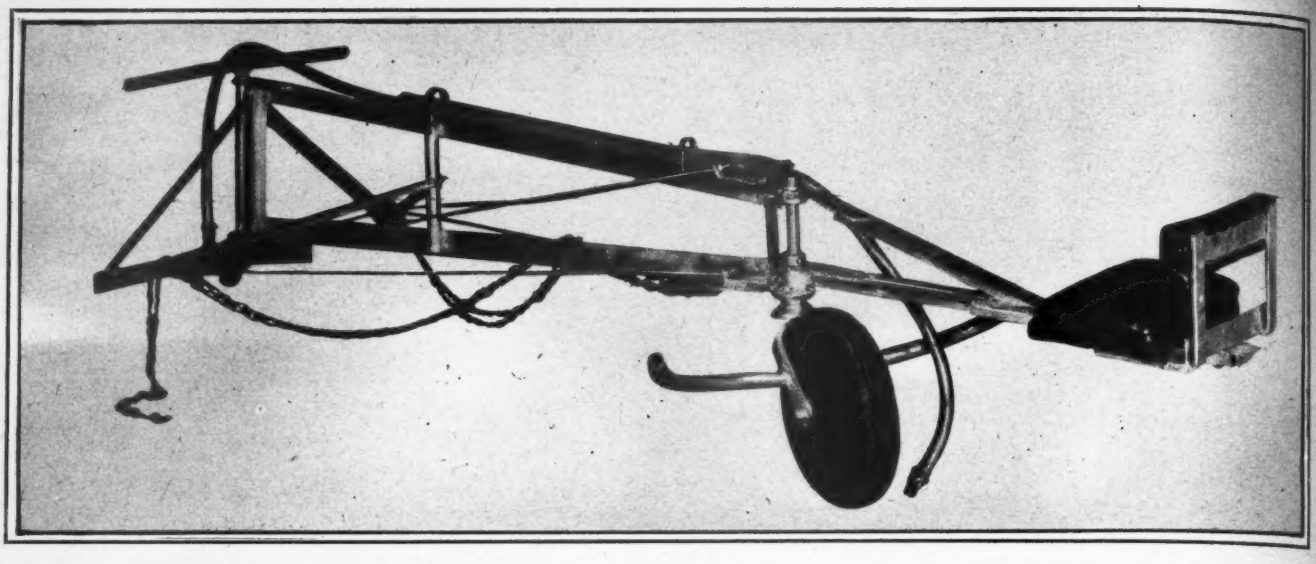


LABOR-SAVING GADGETS

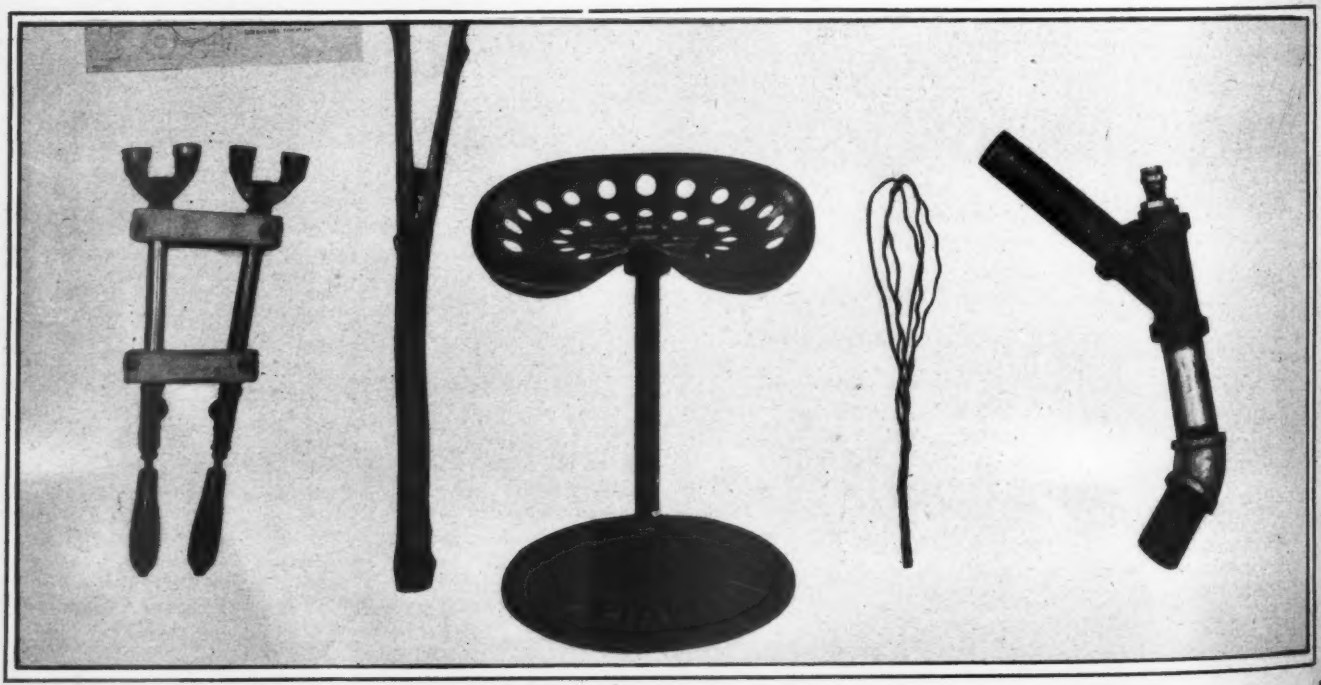
HERE are a number of labor-saving gadgets which fruit growers exhibited at the recently held Apple Show of the Michigan State Horticultural Society. Designed and made by growers themselves these gadgets show what enterprise and ingenuity can do to lighten labors on the fruit farm.

The Michigan Society pioneered in promoting a hobby or gadget show, but it is hoped that other state societies will also see fit to give growers the opportunity of exhibiting homemade labor-saving devices. American Fruit Grower passes along this Michigan idea because it is interesting, educational, and just too good to be overlooked by other fruit shows.

Top photo shows a trailer cart for spraying the under limbs, exhibited by Eugene Heuser.

Center photo (left), tree hole digger exhibited by H. B. Crane; spray seat on springs (center) and (right) a spray gun holder.

Photo below (left to right)—wide sweep boom for cherries or peaches; a tree brace exhibited by Robert Anderson; swivel seat exhibited by J. J. Hill; spray mixer exhibited by Ellis Gilson, and a tank refiller exhibited by E. J. Rasmussen.



AIR CONDITIONED APPLES

(Continued from page 7)

more than doubled in comparison with cold storage fruit at 32° F. No brown core has been experienced at any time, whereas there has been as much as 50 per cent or more of brown core in Hudson Valley and Western New York McIntosh in April and May coming out of ordinary cold storage. Controlled atmosphere McIntosh have kept on the market place after removal from storage in excellent condition. Buyers who have become educated to this type of apple will pay a very considerable premium after the first of March. In 1944 with the price ceiling situation what it is there may not be any such premium, however.

The main limitation is one of economics rather than one of pomology. Storage at any time is a speculation and storage for market in March, April and May is an added speculation. The owner of the apples has no assurance that prices will be higher in May than in February, even though he has every assurance that his apples are in better condition than ordinary cold storage apples.

The "commercial" controlled atmosphere storage room at Cornell which is run as a pilot plant storage holds only 2000 bushels but we have had four years of experience in marketing these apples. In three of the four years the procedure has paid a very handsome dividend. In the fourth year (1941) we could not get any premium on the New York market for our controlled atmosphere apples. That year there was a superabundance of all kinds of McIntosh on the New York market in late spring. Most of them were in very poor condition. The consumers quickly reacted to these poor apples and would not touch any kind of McIntosh. All of the storages had unloaded their McIntosh and there was a real glut at sacrificial prices in April and May. Of course, we might create an alibi that if sufficient consumers were educated to controlled atmosphere apples a small premium would be paid even in a period of market glut. That is merely wishful thinking, however.

Experience has shown that the cost of storage is from 8 to 10 cents a bushel per season more than ordinary cold storage costs. This includes both construction and operation costs.

It has been known for a good many years that the ripening of many fruits

(Continued on page 22)

He did everything to protect his crop, *except* • • •

. . . except taking the relatively inexpensive, but sure, precaution of preventing the ravages of the foliage and bud-devouring tree climbing insects.

But Bill wasn't alone. There were thousands of fruit growers just like him in 1943; and there'll be lots of them in '44, for these pests, the cutworms, cankerworms, basket or bagworms, rose beetles, flea beetles and other climbing insects strike in unexpected places. Don't take a chance on losing your next season's crop. Band NOW with Tree Tanglefoot before the adult insects climb up into the trees and lay their eggs.

Be sure to get genuine Tree Tanglefoot. The effectiveness of its formula has never been approached. It's easy to apply and one application remains effective for months. For sale at your hardware or seed merchant.

THE TANGLEFOOT COMPANY
GRAND RAPIDS • MICHIGAN

The one effective method of stopping all climbing bud and foliage-devouring insects.

TWO MILLION DOLLAR MEAL

EVERY day America's eight million fighting men consume almost five million dollars' worth of food — nearly two million dollars a meal.

And that's in addition to what goes to our fighting allies.

On top of that, America's 35 million families, working harder and eating more, must have their meals.

That gives you some idea of the job America's farmers are doing.

This food is part of the wartime load the railroads are hauling. Together with war equipment, munitions and raw materials it adds up to 1⅓ million tons of freight to be moved a mile every minute of the day and night.

To keep it all on the go requires that a loaded freight train start on its way every four seconds.

This is a load that no other transportation system in history has been asked to shoulder. It is being carried with little more equipment than before the war. And as with farmers, thousands of skilled railroad workers have gone to the battle fronts.

So far, with the fine cooperation of shippers and receivers, the railroads have carried the load.

And they are determined to keep on backing to the limit the men who are fighting to protect our free American way of self-reliance, enterprise and initiative.

BUY MORE WAR BONDS

ASSOCIATION OF AMERICAN RAILROADS

ALL UNITED FOR VICTORY

AIR CONDITIONED APPLES

(Continued from page 21)

could be stimulated by the addition of ethylene gas. The problem with apples, however, is usually not one of getting them to ripen but to keep them from ripening. In recent years it has been found that apples themselves gave off ethylene when they approached the eating ripe stage. The question arose in the minds of some storage men as to whether or not a rather ripe lot of apples in storage might not stimulate the ripening of a less ripe lot.

Experiments at Cornell have shown that one lot of apples stored with another lot may have no effect on its ripening or it may have a very appreciable effect. The magnitude of the ripening effect depends upon at least two factors.

One factor is the ripeness of the lot that is supposedly giving off the ethylene. Lots of apples that have been in storage for a considerable time or apples that have been allowed to stand on the packing house floor for several days before storage are potential trouble makers. These slightly ripened apples may be giving off considerable quantities of ethylene. Not only will they not keep as well in storage as they should, but they may affect the less ripe fruit in storage.

The second factor is the ripeness of the other fruit in storage. If all the fruit in storage is rather ripe, it will all probably be giving off some ethylene and one lot will not effect another. Likewise if all the fruit is of the proper degree of maturity for long time storage we would not expect any effect of one lot on another. The trouble comes when we add rather ripe fruit to a room of fruit which otherwise has the proper degree of maturity for long time storage.

The question arises as to just how significant this effect may be. As indicated above, under some conditions there may be no effect whatsoever yet under the conditions described above there may be a considerable effect. When conditions were such that a stimulation effect might be expected, it was found that the average loss in storage life was 25 per cent in a number of experiments at cold storage temperatures.

Experimental work has not demonstrated that it would necessarily pay to store different varieties separately. For example, a lot of Cortland that has stood on the packing house floor for 5 days may do more damage to other Cortlands in storage than a lot of McIntosh that was picked at the

proper time and immediately stored.

It was found many years ago by workers in the U. S. D. A. that the apple scald disease was due to accumulations of certain gases that the apples themselves gave off. In this case the room is in a sense "air conditioned" by absorbing these gases as fast as they are given off by using oiled paper wraps or shredded oiled paper.

It was found several years ago at Cornell that some lots of apples give off more of these scald vapors than do others. Ripe apples tend to give off more of them than do apples prime for storage. Of course, the latter apples are more susceptible to scald but the presence of ripe apples may accelerate the appearance of scald. It was also found that McIntosh apples would accelerate the appearance of scald on Rhode Island Greening. This must mean McIntosh gives off considerable quantities of scald gas.

This does not mean that scald susceptible varieties will not scald if stored alone or stored in the absence of any ripe apples of the same variety. It merely means that the severity of the scald may be greater in the presence of another variety like McIntosh. It has not yet been commercially demonstrated whether or not it would pay in dollars and cents to store a scald susceptible variety alone.

There are many sources of odorous gases in the apple storage. The presence of mold gives a musty odor. Incompletely cured box wood gives a pronounced odor to the atmosphere. The presence of other foodstuffs sometimes gives a strong odor. Apples absorb these odors and usually lose this odor (which contributes to an off flavor) upon standing in fresh air after removal from storage. Very often, however, these odors are so strong that this off flavor persists in the fruit until it reaches the consumer's hands. More than one lot of apples has been discounted in price because of this absorbed odor.

The use of ozone seems to destroy many of these odors but there is a question as to whether it destroys all of them. It may merely mask the odor in the room. If there is a real odor problem in an apple room the problem can be solved by air conditioning the air. The atmosphere is passed through activated carbon similar to that used in a soldier's gas mask. These air conditioning units can be incorporated into a blower system of cooling. If a blower system is not used, a separate carbon unit with a fan must be used. Both types of carbon units are on the market. The carbon can be reactivated after it is saturated with these noxious odors.

Success on the fighting front depends to a great degree on how well truck transport performs on the home front. Trucks must not break down at a time when they are so urgently needed to haul the food and materials that will help win the war. The P.M. Service that GMC dealers pioneered long before the war is just the service that will help keep your trucks rolling during these critical times. The start of the New Year is the right time to start taking time out for regular visits to your GMC dealer . . . give your equipment the advantage of his proved time-saving, money-saving, truck-saving service!

Special "Service Payment Plan" available through our own YMAC

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KEEPS YOUR TRUCK ON THE JOB

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WE'LL PATCH THE PATCH!

We are sensitive to the anxiety any farmer must feel about his 1944 program, knowing that again he will have to rely largely on old machinery, and will have to produce more than he ever did before in one year.

The added strain on farm equipment the past year resulted in a demand for repair parts far heavier than normal. Many of these parts require the same scarce materials as war machines. In some cases, enough for both is not immediately available . . . and we all know which must come first.

We believe that farm equipment owners, aware of this fact, will voluntarily and gladly assist in conserving critical repair parts during the coming year.

Allis-Chalmers dealers are ready to check your farm equipment *now*. Worn or broken parts should be repaired or rebuilt to conserve new parts whenever possible, and new parts used only on machines that cannot be repaired in any other way.

At Allis-Chalmers we serve on two fronts simultaneously . . . war materials and farm equipment. Our work on neither can be relaxed for an instant. Every repair part, every farm machine permitted by our allotments, is being built and will be available for seasonal use.

★ *Let's Finish the Job!*

ALLIS-CHALMERS
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BUILD YOUR OWN TRACTOR
FROM OLD AUTO PARTS

Now anyone can build a strong, durable, all-purpose tractor at lowest possible cost. Easily handles plowing, cultivating, hauling and heavy farm work. Our proved working plans make it simple to build. Large 22" x 34" drawings give every construction detail.

SEND ORDER TODAY. Complete plans, parts list, and instruction book, only $1.00 postpaid. Money-back guarantee.

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NUT GROWERS NEWS

PLANT SOME NUT TREES

NOW is the time to plan to set some nut trees in the spring. Catalogs of nut tree nurseries must be secured and studied, the kinds and varieties of nuts must be selected and the order placed. A few of the state experiment stations and the United States Department of Agriculture issue bulletins on nut growing and careful study of these publications by the prospective planter will assist him in making the most of his venture. To set nut trees is not enough, they must be selected carefully, set correctly, and given intelligent care. The rewards of careful planning are great and extend far beyond the lifetime of the planter.

Nuts are a delicious and highly nutritious food, ranking very high in this respect. From childhood to old age the gathering of nuts is a most pleasant pastime. The trees are among the most handsome of our native trees and deserve a place of honor on any farm or estate. On the lawn, along fence rows or on rough uneven ground not suitable for cultivation they soon become features of the landscape. With their beauty and crops of nuts they add much to the pleasure of country life. And in their old age they are valuable timber trees.

To have nut trees at their best, only grafted or budded trees of named varieties should be set. The nuts produced by such trees are far superior to those produced by seedling trees. It is like comparing our best apple varieties with wild fence row seedlings. Nuts of the grafted named varieties are much superior to seedling trees in size, ease of cracking and extracting the kernels and in the quality of the nuts. The meats of good black walnut varieties are easily extracted in quarters, while hickory varieties often give their kernels in halves.

The grafted trees cost more than seedling trees but this first cost will soon be forgotten. They come into bearing earlier than seedling trees and each year the ease with which the nuts are cracked and the kernels extracted will serve as a reminder of the wisdom of planting named varieties. He who has cracked a dish of Thomas black walnuts after

(Continued on page 28)

STATE NEWS

CONNECTICUT—More than 300 fruit growers attended the annual meeting of the Connecticut Pomological Society which was held at the Hotel Garde in Hartford on December 7 and 8.

The highlight of the two-day meeting was the presentation of the Society's Certificate of Distinction to Professor Sherman P. Hollister "in recognition of outstanding achievement and meritorious service in the field of Pomology." Mr. John Lyman of Middlefield, in making the presentation, explained that Professor Hollister has been on the staff at the University of Connecticut for 35 years and since 1921 Head of the Department of Horticulture. Professor Hollister is a past president of the Connecticut Pomological Society and has been a very active member of the Executive Committee and chairman of the New Fruits Committee for a number of years. Mr. Lyman explained that the fruit growers of Connecticut consider Professor Hollister a true friend and an outstanding leader.

Mr. W. S. Campfield, Secretary of Virginia Horticultural Society gave an inspiring talk on government regulations. Other out-of-state speakers who contributed considerably to the two-day session, included: Dr. M. B. Hoffman of Cornell University, Dr. D. W. Hamilton of the U.S.D.A. Bureau of Entomology, Dr. O. C. Boyd of the Massachusetts State College and Mr. M. E. Buckman, fruit grower of Sodus, New York.

It was gratifying to have a good number of out-of-state fruit growers and their wives present for the meetings.—H. A. ROLLINS, Extension Fruit Specialist, Storrs.

TENNESSEE—The Tennessee State Horticultural Society at its recent meeting in Knoxville, elected James E. Ring, Franklin, Tennessee, as its President. Mr. Ring served as Vice-President from middle Tennessee several years ago.

JAS. E. RING

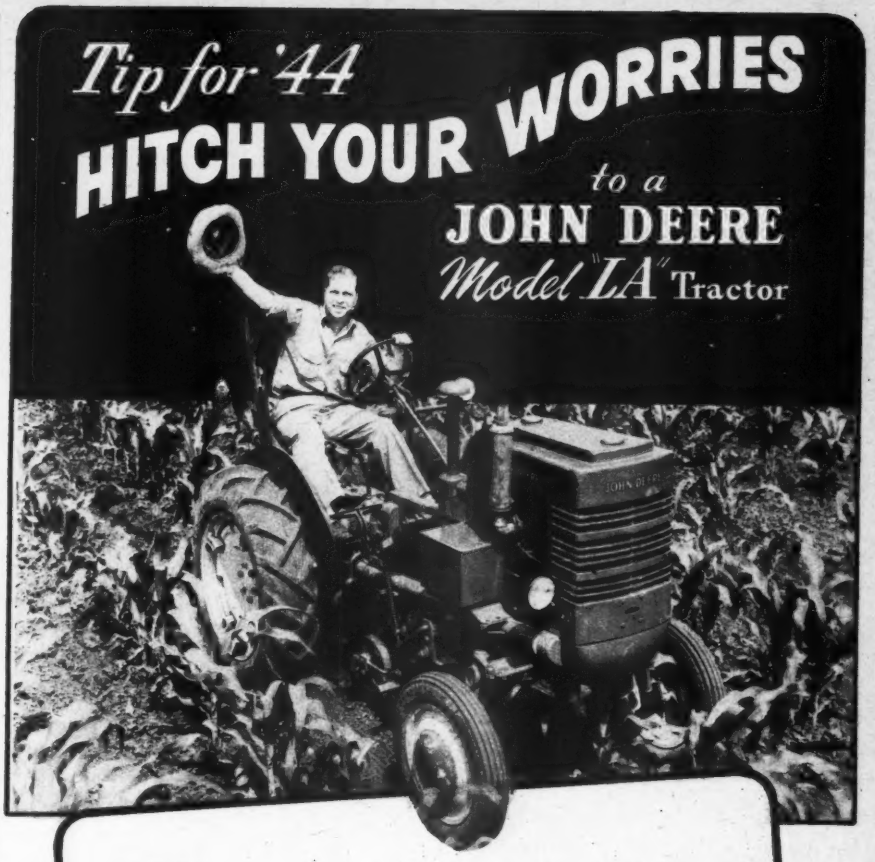
In honoring Mr. Ring with this office, the Society has brought to its services a leader who has the "grass-roots" experience, essential to successful fruit growing, combined with the refinement gained through extensive reading, private research and grower contacts.

A member since 1925, Mr. Ring has attended many of our annual meetings and, together with Mrs. Ring, has attended all of our summer tours. In his orchard he is testing about fifty varieties of the newly introduced peaches. For several years he has subscribed to one or two horticultural society publications from other states, and has borrowed from, and (get this) returned to our files many of our exchange publications.

The Society has been fortunate, too, in having elected Vice-Presidents of the caliber of Clyde McDonald, Dayton; John N. Peay, Goodlettsville and C. H. Rochelle, Kenton. Much of the credit for the successful operation of the Society goes to Prof. G. M. Bentley, who was re-elected Secretary-Treasurer, a position he has held continuously since 1914!—A. N. PRATT, State Horticulturist, Nashville.

MARYLAND—Although the experts expect several more years of war, post-war planning is in order. A Post-War Agricultural Committee has been set up in Maryland, with Stanley M. Fulton acting as Chairman of the Fruits Sub-Committee, and A. F. Vierheller acting as

(Continued on page 26)



WHEREVER you farm—whatever crops you raise—you will find a fast-working, quality-built John Deere Model "LA" Tractor the practical and economical solution to your labor and weather problems. Work output goes up immediately. Costs take a big drop—this simple, thrifty, easily-operated tractor that handles a 16-inch plow or double-action 5-foot disk harrow is the acknowledged all-around economy leader. If you are interested in a new tractor and working equipment, talk with your local John Deere dealer now. He will do everything possible to get you the equipment you want.

JOHN DEERE, Moline, Illinois

BUY MORE BONDS ★ GET IN THE SCRAP

what ONE ACRE *can do*

America's food and feed production goals for 1944 exceed all records. The question is being asked—"How many more acres must be put under the plow?" In the face of labor and machinery shortages, the question might better be—"How much more can be produced on every acre now being farmed?"

Experiment station results show that the intelligent use of potash, properly balanced with other essential plant foods, can greatly increase yield and quality. If you do not know just how much potash your soil needs to make every acre do its best, your official agricultural advisers will tell you.

Write us for free information and literature on the practical fertilization of crops.

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American Potash means More Crops

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STATE NEWS

(Continued from page 25)

Secretary. Some of the fruit growers' problems in post-war period will be discussed at the Annual Meeting of the Horticultural Society, from which the Committee will learn what growers are thinking and consider as important factors. We know that age of present plantings, varieties, foreign and domestic changes and competition, are among the considerations as are changes in food habits, competition between fruit by-products, such as canned, frozen and dried materials, which will change the picture in low-grade apple production.

Fruit trees are in rather good shape, following the dry summer, but nobody knows what to expect in bloom and set. Strawberries will likely be a short crop, following last winter's cold and summer's drought. Raspberries are in fair shape if they survive the winter without damage.—A. F. VIERHELLER, Extension Horticulturist, College Park.

SOUTH DAKOTA—At the last annual meeting of the South Dakota State Horticultural Society officers were elected: President, H. J. Donaldson, Rt. 3, Sioux Falls; Vice President, Geo. W. Gurney, Yankton; Secretary, W. A. Simmons, Sioux Falls; Treasurer, H. N. Dybvig, Colton; Librarian, Mrs. F. Briley, Mobridge.

H. J. DONALDSON

A state federation of Garden clubs was organized with Mrs. E. Michels, Vermillion, as President, and Mrs. G. M. Jorgensen, Dell Rapids, as Secretary. It was decided to turn over two pages of the magazine to the federation. So far, 11 clubs with a membership of 216 have become affiliated with the State Hort. Soc., and now receive the magazine.—W. A. SIMMONS, Sec'y., Sioux Falls.

MICHIGAN—The Michigan State Horticultural Society will hold the following district spring meetings: Pontiac, February 22; South Haven, February 24; Traverse City, March 3.

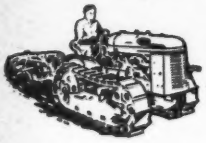
The sweepstake bushel at our recent apple show, a bushel of McIntosh grown by Homer G. Waring of Kewadin, Michigan, was auctioned off to the highest bidder at the Detroit Union Produce Terminal for the benefit of the Good Fellows Club. As there was no ceiling on charity, this bushel of apples sold for $325.00.—H. D. HOOTMAN, Sec'y, East Lansing.

MONTANA—Mr. G. O. Thatcher, Corvallis, was elected President of the Montana Horticultural Society.

G. O. THATCHER

The fruit growers of Montana all feel much better than they have for a number of years. While the crop was light this year prices were the best in about twelve years and already many of them are making plans for better care of their orchards next year which includes pruning, spraying and fertilizing. There will also be some planting more particularly of small fruits. Most of the fruit has gone thru the winter in good condition.—G. L. KNIGHT, Sec'y, Missoula.

HERE'S A FIGHTER WHO CAN HELP



HAVE you ever thought of your Cletrac dealer as a "fighter" who can help you keep your fighting equipment fit to fight?

Your Cletrac Tru-Traction tractor is a fighting machine—to be kept in fighting trim by frequent inspection, correct lubrication and proper tune-up.

Doubtless you know your Cletrac dealer pretty well, but have you kept in touch with him in the wartime maintenance of your Cletracs?

Here's how your Cletrac dealer stands ready to help you get the most from your equipment:

1. **Supply trained, expert service men who can aid you in maintaining and repairing your Cletracs so that they provide dependable, economical performance.**
2. **Give you the benefit of his years of experience in sound advice, and help you do what often seems impossible in keeping equipment working.**
3. **Assist you in furnishing and making out the necessary forms required under government regulations to secure any vital repair parts.**

You'll find, too, that he carries as adequate a stock of parts as war conditions permit.

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NUT GROWERS NEWS

PLANT SOME NUT TREES

(Continued from page 24)

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A list of available publications on nut growing and a list of nurseries specializing in the production of named varieties of nut trees may be had without charge from George L. Slate, Sec'y, Northern Nut Growers Assn., Geneva, New York.

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WORLD FRUIT SITUATION

(Continued from page 16)

this country will take the lead in demonstrating just what can be accomplished in the way of world cooperation and assuring a just and lasting peace.

In the light of such information as is available the market demand for apples during the next decade or two appears to be quite encouraging. In the United States many orchards and trees have been removed and wisely so because of reasons familiar to all fruit growers. Obsolete varieties and unproductive orchards have no place in the present picture. While production in the United States has been well maintained despite the reduction in tree numbers, the question arises as to how long present production can hold up without replacement. The long time outlook for apples looks encouraging, especially for orchards planted on good soils and on favorable sites. With the heavy loss of fruit trees in Europe and a reasonable demand for imported supplies, for a period following the war, prospects from the American export point of view looks rather encouraging.

With regard to peaches the outlook is less encouraging. Peach growers along the Atlantic seaboard are expected to run into some difficult marketing years with supplies outstripping demand. This is especially true under our present system of distribution. While peach plantings in the East appear to be unwarranted, there are numerous locations, no doubt in the Middlewest where peaches could be planted at this time to advantage.

Peaches from the Southern surplus areas often fail to penetrate into the Western areas where supplies are short. A few, well selected sites therefore in certain parts of the country would seem justified, especially when catering to a local trade or nearby market.

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STRAWBERRY
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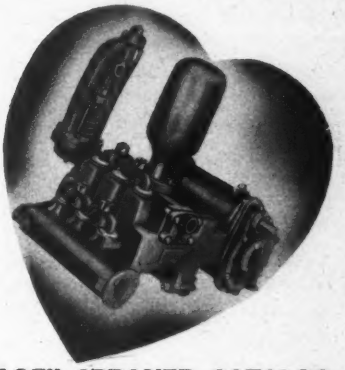

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Heart of this low cost crop protection is the easy working, trouble free "VICTORY" pump . . . built in 7 sizes—6 to 40 gal. per-min. capacities with working pressures up to 1000 lbs. There's a cost cutting sprayer for every grove or orchard.

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Trees that often pay back their entire cost before ordinary trees bear first full crop

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To do our part in correcting the alarming fruit shortage we now make Special ⅓ off price offers of "Expert's-Choice" Fruit Tree Collections. Mail coupon today—get details of Free Tree Offer for a limited time only. Get free book of facts including glorious rose and flowering tree creations of Luther Burbank —and expert selections by graduate landscape architects that enable you to do your own landscaping and give your home a beauty you'll be proud of.

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